NIUTAO

A community case study on climate (im)mobility from Tuvalu

Roannie Ng Shiu

Christina Newport

Yvonne Underhill-Sem

Roi Burnett

Chrisanthy Anne Amosa-Baniani

Baniani Nakala Nia

June 2024

UNIVERSITY OF AUCKLAND
Waipapa Taumata Rau
NEW ZEALAND

Table of Contents

List of Figures i

Acknowledgements ii

1. Research Context 1

2. Niutao 2

3. Methodology 6

4. History of Mobility 9

5. Challenges and Movements 10

6. Decisions and Peace 13

7. Land and Marine Tenure, Use, and Planning 16

8. Resilience and Wellbeing 17

9. Climate-Mobility-Associated Loss 18

10. Conclusion 18

Appendix 1: Country Context: Tuvalu 20

Appendix 2: Research Participants 24

References 25

List of Figures

Figure 1: Map of Niutao and Tuvalu 3

Figure 2: Niutao community workshop women participants 8

Figure 3: Niutao locals having lunch on boat 12

Figure 4: Niutao workshop men and women participants working during the evening .. 16

Figure 5: Participants by age and gender 24

Acknowledgements

Communities

The authors sincerely thank the Niutao community and its leaders who hosted us and generously shared their insights into climate mobility, including not moving.

We are also grateful to our colleagues who, as in-country researchers in Tuvalu, provided generous, insightful, and enjoyable ways of working: Chrisanthy Anne Amosa-Baniani, Baniani Nakala Nia, and Eleala Avanitele.

Special thanks to our Auckland research support team: Grace Shaw, Lanea Tuisosopo, Leah-Moana Damm, Rochelle Ellison-Lupena, and Roi Burnett.

Special thanks also to our Expert Team members who commented in this paper: Dr George Carter and Professor Alistair Woodward.

Special acknowledgements to the Department of Climate Change and Disaster, Government of Tuvalu.

Funding and support

We are grateful to New Zealand Foreign Affairs and Trade Manatū Aorere for the funding to undertake this research and its support for Pacific-led evidence-based policy research.
This project was supported by Te Wānanga o Waipapa/School of Māori and Pacific Studies, Faculty of Arts, University of Auckland.

Design

Special thanks to Luvly Limited, Raniera Ellison and Rodney Ng Shiu who contributed to the graphic design of the research products.
All maps were produced in AutoCad by Ian Cairns and stylised by Raniera Ellison.

Research organisations

University of Auckland Waipapa Taumata Rau, Akairo Consulting, Malatest International

Suggested citation: Ng Shiu, R., Newport, C., Underhill-Sem, Y., Burnett, R., Amosa-Baniani, C., & Nia, B. (2024). *Niutao: A community case study on climate (im)mobility from Tuvalu*. Waipapa Taumata Rau, University of Auckland. https://www.pacific-climate-research.auckland.ac.nz/

ISBN: 978-1-0670223-6-5

Disclaimer: This research was commissioned by the New Zealand Ministry of Foreign Affairs and Trade, funded by New Zealand's climate finance. The views expressed here are the authors' alone and do not necessarily reflect the views of the New Zealand government.

1. Research Context

Climate change is intensifying with a wide range of challenges to the sustainable development and resilience of all Pacific Island countries. Pacific political leaders collectively and individually continue to underscore that climate change remains the single greatest threat to the livelihoods, security, and wellbeing of the peoples of the Pacific. Community leaders also emphasise the need to mitigate and adapt to the effects of climate change because communities want to continue living in their own countries and villages, for as long as possible.

Mobility has always been a part of Pacific ways of living and is part of our resilience. This means that mobility is a measure of last resort when other options for the ongoing flourishing of life have been exhausted. In the context of climate change, mobility includes a broad range of responses influenced by individual, family, clan, tribe, and community circumstances. It can include temporary movement of people within and between communities, provinces, and countries to support community resilience (e.g., via internal recruitment for work and international labour mobility schemes), relocation of people and communities within a district or province or country (whether voluntary or not, including in response to climate-related hazards), and permanent migration across the Pacific or further afield.

Consideration of climate-related (im)mobility also needs to account for other common forms of human mobility such as displacement, where people for forced to leave home to save their lives, and immobility, where people and communities adapt and respond to climate change without everyone moving, whether that 'immobility' is voluntary or not.

Climate change is adding to existing drivers of mobility, especially economic mobility, in the Pacific and elsewhere. Framing current mobility decisions as a direct effect of climate change is a challenge; nonetheless, climate change-related hazards will impact Pacific Island peoples' wellbeing including their heritage, culture, language, and ancestral connections to land; security, including water shortages, the actual loss of land and increased risk to life from intensifying extreme weather events; and livelihoods, including saltwater intrusion affecting agricultural production.

This case study is one of 17 undertaken as part of a comprehensive research project, funded by the New Zealand Ministry of Foreign Affairs and Trade (MFAT), known as Climate Immobility Research in the Pacific. The overall goal of the research is to "enhance Pacific resilience and wellbeing and ensure the livelihoods, security and wellbeing of the peoples of the Pacific are protected in the context of climate change" (Ministry of Foreign Affairs and Trade, 2021, p. 25). Underpinning the overall goal is acknowledgement of Pacific values, knowledge and culture, and Te Tiriti o Waitangi. Each case study explores climate and hazard risk factors, resilience and decision-making practices, mobility patterns, land and marine tenure, understandings of wellbeing, and climate-mobility-associated loss.

This case study was undertaken on Niutao in Tuvalu: an island country in the South Pacific consisting of three reef islands and six atolls. The population of Tuvalu is 10,645 (Ministry of Finance, Economic Planning and Industries, 2017).

2. Niutao

Brief introduction

Niutao is a small reef island in the northern group of Tuvalu. This community is important to this research due to its low-lying location and because it represents a community, including its transnational community in Niue, that seeks to stay in place – voluntarily immobile.

Although likely a community to stay in place, many in the community are accepting that mobility is key to some people remaining there and acknowledge that mobility will continue to play an integral role in the future.

Figure 1: Map of Niutao and Tuvalu



The place

Niutao is a small reef island with an enclosed lagoon and narrow fringing reef. The island contains two villages, Kulia (the administrative centre and capital of the island) and Teava. The island has a maneapa (traditional meeting house), a primary school, a church, and a post office and local government office (Kaupule).

Vegetation on Niutao is abundant, but of limited variety. The main food staples are pulaka (swamp taro grown in cultivated pits), breadfruit, coconut, and pandanus. However, harvesting of pulaka is now being severely impacted by saltwater inundation.

Access to the capital of Funafuti and further abroad is limited for those living in Niutao. The only transportation between Niutao and Funafuti is by two government-owned

interisland ships that transport both passengers and goods. Due to low capacity, these boats only reach each island every 2 to 3 weeks. Despite the difficulties in transportation to and from Niutao it is an island that has long sustained those living there.

The people of Niutao have a strong relationship to their environment and are renowned for their knowledge and skills, including:

- ao (coconut tree care)
- kosotalo (cultivation of pulaka)
- mulivaka (fishing techniques)
- lima (self-defence)
- tufuga masaki (massaging the sick)
- tufuga vaka (canoe building)
- tufuga fale (house building)
- tavala (life saving techniques) (Sogivalu, 1992).

These skills have been handed down through many generations and are still practised by the community today.

The relationship the people of Niutao have with their land is being increasingly threatened by the impacts of a changing climate: coastal erosion, declining and limited crop diversity, and declining freshwater resources (Government of Tuvalu, 2020c). Further, cyclones have been increasing in frequency and severity. This was particularly evident in March 2015 when Cyclone Pam caused significant damage to houses, crops, and infrastructure.

Ciguatera fish poisoning is also a concern on Niutao and is known to occur throughout the year but more frequently when westerly winds prevail (Sauni et al., 2008).

The reefs are important in Niutao for the protection of coastal areas and the people who live there. They witness unusually high tides, flooding, and erosion. Furthermore, the community is dependent on continued coral reef health for the renewal of the sediment on which islands are built. As reefs continue to degrade, Niutao will become even more vulnerable to sea-level rise and changing wave patterns, which may result in more flooding on the island (Quataert et al., 2015).

The people

Niutao is home to approximately 461 people (Government of Tuvalu, 2020c).

Opportunities for paid employment on the island are limited. Employment in the public sector, in particular national government and the island council, known as the kaupule, is the main source of income for 50% of households. Other opportunities for cash income are casual labour, sale of fish or produce, and handicraft production.

Remittances from overseas are a very important source of income, with 47% of households receiving remittances from outside Tuvalu in 2012 (Government of Tuvalu, 2020c).

Fishing also plays an important role economically as a main income for 35% of inhabitants. Previous research has shown that there is an average of 1.5 fishers per household. Given the limited economic opportunities, this makes sense (Gillet, 2016).

Other income sources include the selling of toddy (sap from the unripe coconut blossom) and handicrafts, and shop ownership. These activities provided the first income source for 15% of all households (Gillet, 2016). See Appendix 1 for national policy context.

Throughout the 1980s and 1990s, up to 400 people from Niutao worked as off-island labour, primarily at the phosphate mines of Nauru and Banaba (Noricks, 1983). More recently, employment on labour mobility schemes in Australia and New Zealand in horticulture, agriculture, and viticulture industries have attracted inhabitants off-island.

There are limited data available on labour mobility specific to Niutao. However, participants shared that members of the Niutao community are engaged in labour mobility. Opportunities to enter New Zealand have increased from 75 to 150 places per year for 2022 and 2023 via the well-established Pacific Access Scheme. This increase was to account for the nonavailability of Pacific Access Category (PAC) places in 2020 and 2021 during COVID. Further, those from Niutao also participate in seasonal labour mobility schemes in New Zealand and Australia. Bedford and Bedford (2023) noted that 405 Tuvaluans worked on the Recognised Seasonal Employer Scheme in New Zealand between 2007–2008 and 2021–2022.

3. Methodology

The research project *Climate (Im)mobility in the Pacific* was co-designed to generate knowledge using formal and informal Indigenous qualitative social science methods. For each country, the research approach was informed by methodological contributions from Indigenous scholars. This was to ensure consistency with Indigenous research principles.

Co-design, ethics and approvals

The research was co-designed with local researchers and government stakeholders in Tuvalu. This involved UoA team members travelling to Tuvalu on a 'scoping' trip to meet government stakeholders as well as the in-country researchers. This trip was essential for designing the research in a way that was suited to the local community and national context, as well as centring Tuvaluan ways and approaches to doing research.

The University of Auckland (UoA) Human Participants Ethics Committee approved the ethics application in February 2023. Research approvals were also obtained in Tuvalu and Niutao as follows:

- National research approval was received through the Director of the Climate Change Office on 26 April 2023.
- Niutao approval was obtained via the local island authority, Ministry of Local Government and Agriculture and the Department of Immigration in June 2023.

The research in Niutao was delayed significantly. Boats to Niutao from Funafuti depart once every couple of weeks but are frequently cancelled or delayed, particularly if local government officials or church leaders must travel to the capital. Further, there were significant delays in sending video and audio-recording equipment to Tuvalu from New Zealand – a process which took nearly 3 months. These challenges meant the research, which was scheduled for May of 2023, did not start until September. The local researcher contracted COVID-19 on the boat trip from Funafuti to Niutao but proceeded as there were no other scheduled boats to enable the research to be undertaken in time.

Research team

The research was led by a team of local researchers, all fluent in te Gana Tuvalu (the

Tuvaluan language). The in-country team of Chrisanthy Anne Amosa-Baniani, Baniani Nakala Nia, and Eleala Avanitele have extensive experience within government and community climate change sectors in Tuvalu. The special position of the research team members generated nuanced understandings of the entangled themes of mobility and the impacts of climate change over generations and is a unique feature of this study design. Research co-leads Dr Roannie Ng Shiu from Samoa and Dr Christina Newport from the Cook Islands, along with research coordinator Roi Burnett from Kiribati, provided guidance and support to the team.

Recruitment of participants

The research commenced in September 2023.

Participants were recruited in consultation with community leaders. Thirty members of the community participated in the research, all Tuvaluan and residents of Niutao. All participants spoke te Gana Tuvalu.

Methods

In Niutao, two methods were used to collect data:

Community workshops

The research team facilitated community workshops for men, women, and youth. During each group workshop, researchers posed questions relating to five themes: environmental challenges and movements; resilience and wellbeing; decisions and peace; land and marine tenure, use and planning; and climate-mobility-associated loss. Community members were invited to share their insights, stories, and experiences in relation to these themes. Each session lasted for up to 1 hour, then each workshop group took turns to share their thoughts to the whole group.

At the youth workshop, the young people were divided into three groups and took turns to visit three ‘stations’ representing a different generational perspective: youth, mature adulthood, and grandparenthood. The young people were asked to share their thoughts on what they thought would make a good life from the perspective of different generations in the context of climate change. The sharing in each station lasted for 15–20 minutes.

Figure 2: Niutao community workshop women participants



Niutao, 2023. Photographer: Baniani Nakala Nia

Walk the land

A community elder walked with one member of the research team around the community. Observations relating to change were recorded. The leader also shared stories and experiences relating to the impacts of climate change in Niutao.

See **Appendix 2** for detail on research participants.

Data transcription and analysis

Interviews, workshop data, and researcher reflections were translated into English. Photographs and video clips were collated for analysis.

Transcripts were coded using NVivo data analysis software.

All material, including relevant publications pertaining to this research, was shared and discussed so that all team members could share their insights.

Debrief

The research team undertook sensemaking sessions and debriefed during and on completion of formal research activities. Both in-country researchers attended a project

sensemaking workshop in Auckland in November 2023.

The research leadership team of Underhill-Sem, Newport, and Ng Shiu also debriefed regularly with the in-country team. These debriefs provided opportunities for more contextual and nuanced analysis because members of the leadership team had relevant previous research experience in the Cook Islands.

In the next section we present historical information about mobility relevant to the people of Niutao. This is followed by feedback and findings from the community on a range of topics that describe a community with strong connections to land, ocean, and cultural traditions, that is pragmatic about mobility for some, so that others can stay.

4. History of Mobility

Historical settlement and mobilities (ancestral time/ancient memory)

There are several legends about how Niutao was populated and where the first people came from. It is said that Niutao was first inhabited by Gods and Goddesses who practised black magic and passed down their knowledge of witchcraft to the early inhabitants of the island.

Traditional oral histories tell of the first inhabitants, believed to be half spirit, half human, who lived at a village called Mulitefao and were led by Kulu who took the form of a woman.

Numerous comings and goings were believed to have occurred for many years, but it is believed that the island was settled by people who originally came from Samoa during the 12th or 13th centuries. The settlers from Samoa travelled by canoe captained by a man called Mataika. Mataika was soon followed by another party of travellers from Samoa who all settled on the island and lived together with the beings from Mulitefao (Nia, 1983).

Various stories also refer to battles fought with Kiribati warriors travelling from the north. In the 17th century, peaceful travellers from Kiribati came to Niutao and settled in the islands of Kuria, Marakei, Maiana, Beru, and Tabiteuea (Nia, 1983). Stories tell how travellers from Kiribati exchanged knowledge and skills, which in turn were reciprocated

with parcels of land in the present-day village of Kulia in Niutao (Sogivalu, 1992).

Recent settlement and mobilities (living memory time)

Christianity arrived in Niutao in 1861 via two traders known as Mr. Tom and Mr. Jack. These traders were assisted by Mose, a Niutaoan man, who helped translate (Munro, 1987). Pastors and missionaries continued to arrive over the next century.

In 1946, a lands commissioner toured Tuvalu to find out how much land each island had for its inhabitants. Concerned about the population density on Niutao, the colonial administration encouraged households on Niutao to go to Tonga or, if they preferred, settle in Niulakita, the southernmost island of the Tuvalu group. Many chose the latter, resulting in male workers and their families migrating there in 1949 to cut copra (Nia, 1983).

In the 1990s, some families from Niutao relocated to the village of Vaiea in Niue. This took place when former Tuvalu Governor General Sir Toomu Sione made an agreement with former Niue Premier and Member of Parliament Young Vivian, with whom he shared kinship ties. Some community members in the workshops recalled discussions with Sir Toomu Sione about moving but had decided to remain. Families from Niutao shared that some of their family members did not stay in Vaiea; some returned to Tuvalu while others moved to New Zealand once they were eligible. Some of those who remain in Vaiea have intermarried into the Niue community and have had children.

5. Challenges and Movements

Environmental challenges

Data from the latest Niutao integrated vulnerability assessment (IVA) in 2020 highlights that the most pressing vulnerability issues for residents include:

- coastal protection
- coastal erosion
- crop yield
- land pollution
- land food resilience (Government of Tuvalu, 2020b).

During discussions, participants were keenly aware of the environmental hazards and challenges occurring in Niutao and shared stories that aligned with the IVA findings.

Women and men from the workshops shared stories of environmental changes that have occurred throughout their lifetimes, for example, changes in weather patterns and temperatures, coastal erosion, sea-level rise, and difficulty growing certain crops. A key change mentioned by both the men's and women's groups was the loss of the traditional food crop pulaka. Saltwater intrusion has affected the swamps where pulaka was grown. Some participants noted that the recent challenges in growing and harvesting pulaka were enough to cause people to migrate to Funafuti or abroad:

> *For me, the reason why I would support migration, if we take this crop named pulaka, before it was very hard to die but as time went on to around 2002 it started becoming affected from underneath the swamp. Then they started to die off. Time went on, there were completely no pulaka under the swamp. Now there is no pulaka swamp. Now it is all dead. (Member of men's community workshop)*

The increased frequency of cyclones and strong winds was also mentioned in the workshops, with participants noting that these were becoming harder to predict. The strong winds were also associated with higher tides and storm surges:

> *In addition to the strong winds, it is unbelievable. The waves in 1993, 2015 crashed inland, it's unbelievable. The time spaces are becoming thin. In the past we never saw this happening. No waves. Now there are changes. (Member of men's community workshop)*

> *With respect to a changing climate, especially seasons for cyclones or strong winds, I know for a fact that these catastrophic events usually happened during the month of March. However, this is not the case in our present situation, cyclones and strong winds come anytime. (Member of women's community workshop)*

These environmental changes and the loss of pulaka were associated with changes in lifestyle and culture for those living in Niutao. One woman described how the loss of pulaka has changed traditional food practices:

Life nowadays has totally changed from what we were used to back in the day. Back in the day, Saturday was the day on which family prepared food for Sunday (tonai). Food such as baked pulaka, and other foods, were all cooked in the earth oven. But nowadays Saturday is not used as how our ancestors used to do things. (Member of women's community workshop)

Figure 3: Niutao locals having lunch on boat



Niutao, 2023. Photographer: Baniani Nakala Nia

Social challenges

Participants from both the men's and women's workshops emphasised the social changes and challenges associated with mobility that had occurred in Niutao. With challenges to livelihoods on-island, mobility via seasonal labour schemes or the PAC to New Zealand was seen as an adaptation strategy. However, increased mobility came with gendered and social challenges. Participants noted that labour mobility, mostly men going away for 7–9 months at a time, had impacts on partners and families who stayed behind, causing relationships to break down and an increase in alcohol consumption on-island. Further, in relation to the PAC scheme, one woman also mentioned that with permanent mobility abroad, there was an increase in vacant households that created increased labour for women in Niutao to clean and maintain the village.

Overall, climate change impacts are already affecting the Niutao community. Saltwater intrusion is impacting the community's ability to harvest pulaka. Further, there has been an increase in cyclones and strong winds are becoming harder to predict. These environmental challenges and existing mobility pathways have resulted in changes to culture and lifestyles.

6. Decisions and Peace

Participants emphasised that there are different levels of decision making in Niutao when it comes to climate-related (im)mobility. Mobility decisions were seen as being made at the household or individual level, rather than at the community level. Both the men and women emphasised that it is usually the head of the family (i.e., the father or oldest brother) who makes decisions around moving or staying. Decisions are sometimes made in consultation with wives or elder women in the family about who leaves and who stays, and when to leave and when to return.

There are some mobility decisions that are made at a community level by the island council, also known as the traditional authority or the Falekaupule, particularly in relation to employment on overseas labour mobility schemes. The Falekaupule works with the national government to recruit workers. One woman in a workshop described the selection process – the Falekaupule advertises employment, interested people register their names, and then the Falekaupule undertakes a screening process. Its decision is influenced by the applicant's commitment to community events or functions; however, workshop participants mentioned that there are now some overseas employers recruiting individuals directly rather than going through the Falekaupule.

Participants from the men's group emphasised the importance of community decision making for addressing climate-related impacts on Niutao. The Falekaupule was seen as the appropriate political entity to address these impacts, but they acknowledged that there were challenges to it being able to do so. For example, one participant raised the issue of communication from the capital:

> *How do the leaders of our community know that we are facing such problems? Are there any announcements on these problems? The leaders here only listen to the leader from the mainland, Funafuti. If there is a problem, we leaders on the island*

will be notified by the government from the mainland of such a problem and they would give advice to prepare the people on the island because a catastrophic event will happen. With sea-level rise, how will we know that the sea is rising, because there is no notification from leaders from the mainland. (Member of men's community workshop)

Both the men's and women's groups shared numerous thoughts on community mobility, including about how people who are migrating, or looking to migrate, are doing so for economic reasons. Many residents cited the increasing difficulty maintaining a subsistence lifestyle coupled with a lack of employment opportunities as reasons. Participants shared that those who migrated often did so to earn an income overseas to provide for their families who remained:

We send our children overseas for financial support. As a widow, I tell my children to make use of government overseas employment schemes. This is the same situation with other families. (Member of women's community workshop)

Permanent migration abroad was also seen as a move to ensure a good education for their children:

One of the reasons... is because they need money and good education for children. Tuvalu too has schools, but it is better in NZ. (Member of women's workshop)

Residents also emphasised that future uncertainty due to climate change was factored into mobility decisions:

One of the reasons why people move or migrate is because of climate change. People hear rumours of sea-level rise which creates fear in our people and makes them decide to move. (Member of women's community workshop)

One of the things that I think with people leaving, those people think that it is better they migrate because there is a better chance for their family, their children and future generations in those places. But here, you cannot really feel you have a future. (Member of women's community workshop)

While there was a sentiment amongst participants that mobility was a valid response to

the challenges of life in Niutao, participants also highlighted that there were those who would stay in place. Apparent through discussions were the ancestral connections that people of Niutao had to their place, and the necessity to maintain this in the face of climate-related impacts:

> *I went out to the world, but I want to come back to my home island. I cannot abandon my home island. This is where I was born. (Member of men's community workshop)*
>
> *There are those of us that want to remain in the island because of our identity of being Niutao. (Member of women's community workshop)*

Others highlighted that kinship and familial ties necessitated obligations to stay in place. An example was the resting places of family members, especially parents, being there meant that they must also be buried next to their relatives. Another example was that being the oldest in the family meant having to stay in place to raise the family and look after the family property.

Overall, decision making in Niutao occurs at different levels. Most mobility decisions occur within gendered, household-level decision-making structures. The community recognised the importance of community-level decision making for climate change adaptation and climate-related mobility. Further, the community expressed a pragmatic attitude to future climate-related mobility, with some moving so others can stay.

Figure 4: Niutao workshop men and women participants working during the evening



Niutao, 2023. Photographer: Baniani Nakala Nia

7. Land and Marine Tenure, Use, and Planning

The women's group was the only group to discuss land and marine tenure, use, and planning. The women mentioned that the Falekaupule had laws in place that prohibited certain types of fishing, such as spear fishing, and limited the use of fishing nets in certain areas. These are seen as conservation methods.

One woman shared an experience where a member of the village did not heed the law of the Falekaupule against fishing within a conservation area. The village member was fined by having to host and feed the entire community.

Women also discussed the extraction of sand and gravel from the foreshore, sometimes used for the construction of seawalls. To help prevent further coastal erosion, those wanting to extract this from the foreshore must also notify the Falekaupule.

It was evident from workshops that the Niutao community has strong local governance structures in place around land and marine tenure, particularly to address climate change impacts and environmental conservation.

8. Resilience and Wellbeing

Along with challenges, participants shared the ways in which they were adapting to and responding to environmental impacts.

The participants from the men's group shared that to address the difficulties in growing crops they were learning new ways of gardening, for example raised garden beds known as cubic cement gardening. One participant shared:

> *We have sent our children to attend workshops and training on Funafuti. And when they return, they apply their knowledge to the community. As you can see there are families that have gardens at their houses. (Member of men's community workshop)*

However, these gardening initiatives have had varying levels of success:

> *How do we ensure our crops are not dying? We know that it is water. There is no water to water the crops... With this project, we only have the cubic cement gardening but when it comes to drought, we cannot do much because no water. (Member of men's community workshop)*

> *Cubic cement gardening was initiated to response to the problem that we faced with our crops in the taro-swamp dying. This project did not work. All the crops we planted in these cubic cement gardening all died. (Member of community men's workshop)*

The men shared that access to water, such as water-pumps and/or a desalination plant, needed to be addressed in order to be able to grow crops

Despite the challenges, participants shared a strong sense of faith in their Christian beliefs:

> *Although we've witnessed some parts of the island have been affected, I have faith in God. We pray to God for He knows and has created all things. I still remember in my younger days, in the year 1980, that there was an announcement that a huge asteroid will fall from the sky, but this never happened. The other prophecy was the end of days in the year 2000, this never happened. We have to be resilient and have faith in God. (Member of women's community workshop)*

For the Niutao community, resilience and wellbeing are tied to being adaptable and having faith in their religious beliefs.

9. Climate-Mobility-Associated Loss

An acutely felt loss in the community, clearly articulated by the women's group, in 5. Challenges and Movements, was the loss of pulaka. This has also caused the loss of traditional cooking practices such as the use of an earth oven.

The men's workshop was also concerned with the physical loss of land caused by coastal erosion and associated traditional knowledge such as fishing and the harvesting of pulaka.

One man mentioned that the knowledge and skills around building traditional houses was beginning to decline, due to the uptake of contemporary building materials for the construction of houses:

> *Our old women nowadays, some still know how to make leaf thatch, and some do not know... In terms of the traditional houses, it is very hard now to find leaves. (Member of men's community workshop)*

While the Niutao community did not have any formal plans to relocate as a community in future, participants mentioned that the climate change impacts currently occurring were causing them to consider it.

Environmental challenges are already beginning to result in losses for the Niutao community. The physical losses of pulaka and land have also resulted in the loss of associated traditional skills and knowledge. Despite these losses, the Niutao community continues to live with the challenges of climate change.

10. Conclusion

Niutao is a rural reef island in the northern group of Tuvalu. Niutao represents a community, including its transnational community in Niue, that seeks to stay in place – voluntarily immobile. Although grounded in their sense of place, Niutao community members acknowledged that mobility will continue to play an integral role in the future.

During our research, community members shared key insights into climate-related (im)mobility:

Climate and hazard risk factors impacting the community – Saltwater intrusion is impacting the community's ability to grow and harvest pulaka. Further, there has been an increase in cyclones and strong winds are becoming harder to predict.

These environmental challenges are causing more people to engage in labour mobility as a resilience strategy. Further, the environmental challenges and associated mobility have resulted in changes to culture and lifestyles.

Practices of resilience and processes of decision making – The residents of Niutao acknowledged that mobility is a key strategy for safeguarding livelihoods. Most mobility decisions are driven by economic factors and occur within gendered, household-level decision-making structures.

Mobility decisions are connected to the aspiration for new generations to have access to a good education for a sustainable and flourishing future. Rarely was this seen as abandoning home communities. Rather it was seen as ensuring some community members could stay. Those who stayed were understood to be honouring community and family obligations to care for their lands and the graves of departed loved ones.

Past, future and expected mobility patterns – Current patterns of movement are driven by economic imperatives. Climate change impacts are exacerbating these trends due to the challenges of sustaining livelihoods. As a result, more and more people from the community were able to justify their decision to leave Niutao. The movement of people is likely to follow known migration patterns, to Funafuti and further abroad.

Understandings of wellbeing, security and identity – Ancestral ties and faith beliefs contribute to a strong sense of identity and wellbeing for the Niutao community. Residents of Niutao are already experiencing climate-related losses. These losses contribute to mobility decisions. Despite these challenges, ancestral and kinship ties inform relationships of care and an obligation to protect their island. Further, their shared religious beliefs and faith in God contribute to a strong sense of community and resilience.

Appendix 1: Country Context: Tuvalu

Climate change is at the forefront of Tuvalu politics and the impacts of climate change are already evident. The country has repeatedly attempted to construct disaster protection infrastructure since the 1980s, but these interventions have not provided sustained protection from climate events (World Bank Group, 2021). Thanks to media campaigns, many around the world have become familiar with the climate change challenges Tuvalu is facing. Notably, Foreign Minister Simon Kofe made headlines while making his 26th Conference of the Parties speech standing knee deep in the ocean. The desire to emphasise the risks of climate change can lead to attention-grabbing narratives in the media, which contribute to understandings that Tuvalu will eventually become uninhabitable. However, scholars have argued that narratives of uninhabitability have implications for atoll nations such as Tuvalu that are actively working to safeguard their sovereignty and create a safe future for subsequent generations (Farbotko & Campbell, 2022). Tuvalu continues to be a strong voice for climate action and is aware that the country is at risk if bold and drastic actions are not taken globally to reduce greenhouse gas emissions. Tuvalu remains a resilient nation that continues looking to the future.

National policies

Climate change has featured as a priority for the Government of Tuvalu since the early 2000s, both as part of the wider sustainable development agenda and as part of disaster risk management imperatives with a strong emphasis on in situ adaptation. In relation to climate-related (im)mobility, there are no formal guidelines or financial mechanisms available at the community and national level aimed at assisting those who want to migrate (International Organization for Migration, 2021). However, the Government of Tuvalu has referenced climate-related mobility in previous and current climate policy documents. Within these documents and within international spheres, the Government of Tuvalu has emphasised the importance of the legal protections of displaced persons and maintaining the sovereignty of Tuvalu.

In terms of addressing climate change, the Government of Tuvalu has a strong emphasis on in situ adaptation. Tuvalu's latest 10-year national development plan, *Te Kete – National Strategy for Sustainable Development 2021–2030* (Government of Tuvalu,

2020a), prioritises climate change and disaster resilience under its first strategic priority area. The *Tuvalu Infrastructure Investment Plan 2020–2025* (Ministry of Finance, 2020) prioritises climate change, economic, and social infrastructure projects vital for Tuvalu's sustainable development. The plan emphasises that the Government of Tuvalu has made climate adaptation its highest priority, stating "adaptation to climate change is essential for Tuvaluans to remain in the country and continue their unique culture and way of life" (Ministry of Finance, 2020, p. 2). At COP27, Tuvalu announced *Te Lafiga o Tuvalu – Tuvalu's Long Term Adaptation Plan* (Tuvalu Coastal Adaptation Project, 2022), designed to provide comprehensive solutions beyond 2100 including 3.6 km^2 of raised, safe land with staged relocation of people and infrastructure over time; a sustainable water supply; greater food and energy security; and space for expanding civic and commercial areas, including government offices, schools, and hospitals.

Although in situ adaptation remains a high priority, Tuvalu also recognises that climate change impacts may result in the displacement of Tuvaluan citizens. Under its previous and current climate change policy documents, as well as in several international spheres, the Government of Tuvalu has framed climate-related mobility as a humanitarian issue, emphasising the need for legal protections of displaced people. At the high-level signing ceremony for the Paris Agreement in 2016, former Prime Minister Sopoaga pledged to see a UN General Assembly resolution establishing a system of legal protection for people displaced by the impacts of climate change. He further specified that the concern was "not an indication that the people of Tuvalu want to migrate," but rather a humanitarian one, and that was "one aspect of the Loss and Damage agenda"(Government of Tuvalu, 2019, p.2). The intention was reiterated at the Istanbul World Humanitarian Forum later that year.

Further, a draft resolution on "Providing legal protection for persons displaced by the impacts of climate change" (Government of Tuvalu, 2019, p.2) as legally binding was presented by the Government of Tuvalu at the 73rd session of the United Nations General Assembly in July 2019. The document recognised that "States have the primary responsibility to provide protection and assistance to internally displaced persons within their jurisdiction, as well as to address the root causes of the displacement problem, in appropriate cooperation with the international community" and encouraged them "to

develop national laws and policies on displacement" (Government of Tuvalu, 2019, p.3).

Under the previous climate change policy, *Te Kaniva* (Government of Tuvalu, 2012), human mobility was mentioned under Goal 7, which called for an international policy for forced migration due to climate change. In the current *Te Vaka Fenua o Tuvalu / The 2021–2030 National Climate Change Policy* (Government of Tuvalu, 2021), the latest climate change policy outlines a bold 10-year vision for a strong and resilient Tuvalu that protects the identity, culture, and existence of its people. The goal of this policy is to protect Tuvalu from the impacts of climate change through bold and decisive actions that strengthen the resilience of its people and natural ecosystems to climate risks by 2030. Priority Outcome 3: Managed human mobility and protection of national sovereignty, states the policy's intention to protect the rights of people displaced by climate change along with Tuvalu's perpetual ownership of and access to land and ocean territories.

Under this priority outcome, the possibility of islands becoming uninhabitable in Tuvalu is highlighted and there is an emphasis on utilising a human-rights-based approach to climate-induced migration and displacement. There are three priority actions under this section that include:

- Increase and expand opportunities for Tuvaluans to participate in international labour mobility schemes
- Expand scholarships for Tuvaluans to obtain vocational qualifications in construction trades, hospitality, child and aged care, and other industries experiencing labour shortages in other countries
- Develop a national plan that provides durable options for people and communities affected by climate-induced displacement
- Advocate and support the establishment of international legal frameworks on the rights of persons displaced by climate change. (Government of Tuvalu, 2021, p.15)

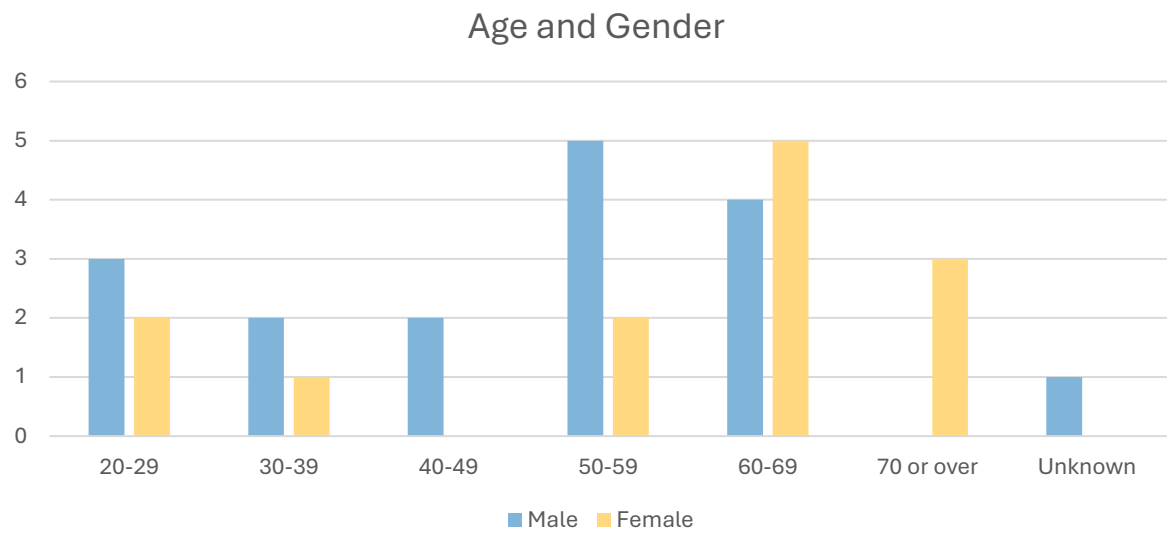
Most recently, in 2023, Australia announced that it would offer 280 Tuvaluans each year access to residency, work, and study rights as part of a new treaty known as the Falepili Treaty. It was announced that Australia would fund coastal adaptation projects in

Funafuti as part of the agreement to help as many Tuvaluans to “stay in their homes with safety and dignity.” This deal wasn’t welcomed by all in Tuvalu, with concerns raised about the lack of consultation with Tuvaluan citizens and the need for not just “the opportunity to move with dignity, but also the option to stay with dignity” (Rovoi, 2023, para. 15). Others have critiqued the deal due to Australia’s continuous avoidance of phasing out fossil fuels. The deal has also raised questions around Tuvalu’s sovereignty on issues of national security, as now Tuvalu must mutually agree with Australia on any partnership, arrangement, or engagement with any other state or entity on security and defence-related matters (Kitara & Farbotko, 2023). February 2024 saw the election of a new Tuvaluan government, under Prime Minister Feleti Teo, that supports the general principles and objectives of the Tuvalu–Australia Falepili Union but acknowledges the lack of transparency and consultation in the formation of the treaty (Radio New Zealand, 2024).

Appendix 2: Research Participants

In Niutao, there were 17 male community members and 13 female community members participating. The age was known for all but one community member. The majority of community members were 50 years of age or older (Figure 5).

Figure 5: Participants by age and gender



References

Andrew, N. L., Bright, P., de la Rua, L., Teoh, S. J., & Vickers, M. (2019). Coastal proximity of populations in 22 Pacific Island Countries and Territories. *PLoS ONE*, *14*(9). https://doi.org/10.1371/journal.pone.0223249

Australian Bureau of Meteorology, & Commonwealth Scientific and Industrial Research Organisation. (2014). Tuvalu. In *Climate variability, extremes and change in the western tropical Pacific: New science and updated country reports*. Australian Bureau of Meteorology and Commonwealth Scientific and Industrial Research Organization. www.bom.gov.au/climate/pccsp/

Bedford, R., & Bedford, C. (2023) How many seasonal workers from the Pacific have been employed in New Zealand since the RSE scheme began? *New Zealand Geographer*, *79*(1), 39–45.

Bedford, R., Bedford, C., Corcoran, J., & Didham, R. (2016). Population change and migration in Kiribati and Tuvalu, 2015–2050: Hypothetical scenarios in a context of climate change. *New Zealand Population Review*, *42*, 103–134.

Calliari, E., & Vanhala, L. (2022). The 'national turn' in climate change loss and damage governance research: Constructing the L&D policy landscape in Tuvalu. *Climate Policy*, *22*(2), 184–197. https://doi.org/10.1080/14693062.2022.2027222

Curtain, R., & Dornan, M. (2019a). *Climate change and migration in Kiribati, Tuvalu and Nauru*. Development Policy Centre Crawford School of Public Policy Australian National University. https://devpolicy.org/climate-change-migration-kiribati-tuvalu-nauru-20190215/

Curtain, R. & Dornan, M. (2019b). A pressure release valve? Migration and climate change in Kiribati, Nauru and Tuvalu. https://devpolicy.org/publications/reports/Migration-climate%20change-Kiribati-Nauru-Tuvalu.pdf

Farbotko, C. (2023). Mobilities and immobilities in Tuvalu: An unexpected pandemic experience? *Australian Geographer*, *54*(4), 527–532. https://doi.org/10.1080/00049182.2023.2179333

Farbotko, C., & Campbell, J. (2022). Who defines atoll 'uninhabitability'? *Environmental Science and Policy, 138*, 182–190. https://doi.org/10.1016/j.envsci.2022.10.001

Farbotko, C., Kitara, T., Dun, O., & Evans, C. (2022). A climate justice perspective on international labour migration and climate change adaptation among Tuvaluan workers. *Oxford Open Climate Change*, *2*(1). https://doi.org/10.1093/oxfclm/kgac002

Farbotko, C., & Lazrus, H. (2012). The first climate refugees? Contesting global narratives of climate change in Tuvalu. *Global Environmental Change*, *22*(2), 382–390. https://doi.org/10.1016/j.gloenvcha.2011.11.014

Gibson, K. E., Barnett, J., Haslam, N., & Kaplan, I. (2020). The mental health impacts of climate change: Findings from a Pacific Island atoll nation. *J Anxiety Disord*, *73*. https://doi.org/10.1016/j.janxdis.2020.102237

Gibson, K., Haslam, N., & Kaplan, I. (2019). Distressing encounters in the context of climate change: Idioms of distress, determinants, and responses to distress in Tuvalu. *Transcult Psychiatry*, *56*(4), 667–696. https://doi.org/10.1177/1363461519847057

Gillet, R. (2016). *Fisheries in the economies of Pacific Island countries and territories*. https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/11/Gillett_16_Benefish-fisheries-in-economies-of-pacific-countries.pdf

Government of Tuvalu. (1999). *Tuvalu initial national communication under the United Nations Framework Convention on Climate Change*. https://unfccc.int/sites/default/files/resource/Tuvalu%20INC.pdf

Government of Tuvalu. (2012). *Te kaniva: Tuvalu climate change policy*. https://www.tuvaluclimatechange.gov.tv/sites/default/files/documents/Te%20Kaniva%20Tuvalu%20Climate%20Change%20Policy%202012_0.pdf

Government of Tuvalu. (2015). *Second national communication of Tuvalu to the United Nations Framework Convention on Climate Change*.

https://unfccc.int/sites/default/files/resource/Tuvalu%20%20SNC%20Final%20Report.pdf

Government of Tuvalu. (2016). *Te Kakeega III: National strategy for sustainable development 2016 to 2020*. https://www.adb.org/sites/default/files/linked-documents/cobp-tuv-2017-2019-ld-02.pdf

Government of Tuvalu. (2019). *Providing legal protection for persons displaced by the impacts of climate change : draft resolution / Tuvalu*. United Nations. https://digitallibrary.un.org/record/3814616?ln=en&v=pdf

Government of Tuvalu. (2020a). *Te Kete – National strategy for sustainable development 2021–2030.* https://australiaawardsfijiandtuvalu.org/wp-content/uploads/2021/01/Te-Kete-2021-2030-National-Development-Strategy.pdf

Government of Tuvalu. (2020b). *Tuvalu integrated vulnerability assessment report: Funafuti community, Funafuti*. www.napglobalnetwork.org

Government of Tuvalu. (2020c). *Tuvalu integrated vulnerability assessment report – Niutao*. Government of Tuvalu and NAP Global Network / International Institute for Sustainable Development.

Government of Tuvalu. (2021). *Te vaka fenua o Tuvalu: National climate change policy 2021-2030*. https://www.tuvaluclimatechange.gov.tv/sites/default/files/documents/Climate%20Change%20Policy_FINAl_0.pdf

Government of Tuvalu. (2022a). *Government of Tuvalu updated nationally determined contribution (NDC)*. https://gggi.org/report/tuvalus-updated-ndc-2022/

Government of Tuvalu. (2022b). *Niutao Water Survey Report 2022*. https://www.tuvaluclimatechange.gov.tv/sites/default/files/documents/Niutao%20Water%20Survey%20Report.pdf

Government of Tuvalu & International Migration Review Forum. (2022). *Tuvalu national voluntary GCM review: Implementing the Global Compact for Safe, Orderly and*

Regular Migration. https://migrationnetwork.un.org/system/files/docs/Tuvalu%20-%20Voluntary%20GCM%20Review.pdf

ICF International. (2018). *Niutao harbour climate risk and vulnerability assessment*. *https://www.adb.org/sites/default/files/linked-documents/48484-004-sd-02.pdf*

International Organization for Migration. (2021) *Tuvalu national consultation on climate mobility summary report 7-8 September 2021*. Pacific Climate Change Migration and Human Security Programme.

Kitara, T., & Farbotko, C. (2023). Picking fruit is not climate justice. *NPJ Climate Action*, *2*(1). https://doi.org/10.1038/s44168-023-00057-2

Kitara, T., Suliman, S., & Farbotko, C. (2024). Fale pili: A Tuvaluan perspective on mobility justice. *Applied Mobilities*, 1–15.

McCubbin, S., Smit, B., & Pearce, T. (2015). Where does climate fit? Vulnerability to climate change in the context of multiple stressors in Funafuti, Tuvalu. *Global Environmental Change*, *30*, 43–55. https://doi.org/10.1016/j.gloenvcha.2014.10.007

McMichael, C., Farbotko, C., Piggott-McKellar, A., Powell, T., & Kitara, M. (2021). Rising seas, immobilities, and translocality in small island states: Case studies from Fiji and Tuvalu. *Population and Environment*, *43*(1), 82–107.

Milan, A., Oakes, R., & Campbell, J. (2016). *Tuvalu: Climate change and migration: Relationships between household vulnerability, human mobility and climate change*. In Report No. 18. United Nations University Institute for Environment and Human Security. https://doi.org/10.13140/RG.2.2.24406.96320

Ministry of Finance. (2020). Tuvalu infrastructure investment plan 2020–2025. https://finance.gov.tv/wp-content/uploads/2022/05/PRIF-Tuvalu-Infrastructure-Plan-FINAL-pages.pdf

Ministry of Finance, Economic Planning and Industries. (2017). Tuvalu population & housing mini-census 2017 report. https://stats.gov.tv/documents-library/#3-85-population-and-housing-census

Ministry of Foreign Affairs and Trade. (2021). *Terms of Reference: Research investigating climate-related (im)mobility in the Pacific*. MFAT.

Munro, D. (1987). The lives and times of resident traders in Tuvalu: An exercise in history from below. *Pacific Studies*, *10*(2).

NAP Global Network. (2018). *Collecting vulnerability data to inform resilience building in Pacific Islands: Tuvalu's experience*. NAP Global Network. https://www.youtube.com/watch?v=B2V78NohSUE

Natano, K. (2021). *Tuvalu national statement for the World Leaders Summit: Honourable Prime Minister Kausea Natano*, COP26. UNFCCC.

Natano, K. (2022). *National statement, Prime Minister of Tuvalu Honourable Kausea Natano*, COP27. UNFCCC.

Nia, N. (1983). Niutao. In H. Laracy (Ed.), *Tuvalu: A history* (pp. 58–65). Institute of Pacific Studies, University of the South Pacific and Government of Tuvalu.

Niehoff, E. (2023). *Tuvalu rising against the tide: Sovereignty through the Loss and Damage Fund?* [Master's thesis, Wageningen University & Research]. https://edepot.wur.nl/643012

Noricks, J. S. (1983). Unrestricted cognatic descent and corporateness on Niutao, a Polynesian Island of Tuvalu. *American Ethnologist*, *10*(3), 471–584. https://www.jstor.org/stable/644270

Oakes, R. (2019). Culture, climate change and mobility decisions in Pacific small island developing states. *Population and Environment*, *40*(4), 480–503. https://doi.org/10.1007/s11111-019-00321-w

Panapa, T., Park, J., Littleton, J., Chambers, A., & Chambers, K. (2021). Towards Indigenous policy and practice : A Tuvaluan framework for wellbeing, Ola Lei. *Journal of the Polynesian Society*, *130*(1), 7–44. https://doi.org/10.15286/jps.130.1.7-44

Quataert, E., Storlazzi, C., Van Rooijen, A., Cheriton, O., & Van Dongeren, A. (2015). The influence of coral reefs and climate change on wave-driven flooding of tropical coastlines. *Geophysical Research Letters*, *42*(15), 6407–6415.

Radio New Zealand. (2024). *Climate change, Falepili treaty, Taiwan on new Tuvalu government's to-do list*. https://www.rnz.co.nz/international/pacific-news/510468/climate-change-falepili-treaty-taiwan-on-new-tuvalu-governments-to-do-list

Rovoi, C. (2023). Need to protect climate refugees more urgent than ever, experts say. *Stuff*. https://www.stuff.co.nz/pou-tiaki/133433981/need-to-protect-climate-refugees-more-urgent-than-ever-experts-say

Salele-Sefo, A. (2019). *Early warning systems helping to build resilience in Tuvalu*. Secretariat of the Pacific Regional Environment Programme. https://www.sprep.org/news/early-warning-systems-helping-to-build-resilience-in-tuvalu

Sauni, S., Kronen, M., Pinca, S., Sauni, L., Friedman, K., Chapman, L., & Magron, F. (2008). *Tuvalu country report: Profiles and results from survey work at Funafuti, Nukufetau, Vaitupu and Niutao*. Pacific Regional Oceanic and Coastal Fisheries Development Programme, Secretariat of the Pacific Community.

Secretariat of the Pacific Community. (2021). *Tuvalu strategic roadmap for emergency management 2021–2023*. https://www.spc.int/resource-centre/publications/tuvalu-strategic-roadmap-for-emergency-management-2021-2023

Secretariat of the Pacific Regional Environment Programme. (2022). *Tuvalu state of environment report 2022*. https://tuvalu-data.sprep.org/system/files/211110-Tuvalu-State-of-Environment-report Final Interactive.pdf

Shen, S., & Binns, T. (2012). Pathways, motivations and challenges: Contemporary Tuvaluan migration to New Zealand. *GeoJournal*, *77*(1), 63–82. https://doi.org/10.1007/s10708-010-9386-2

Sogivalu, P. A. (1992). *A brief history of Niutao*. Institute of Pacific Studies and the Tuvalu Centre, University of the South Pacific.

Taupo, T., Cuffe, H., & Noy, I. (2018). Household vulnerability on the frontline of climate change: The Pacific atoll nation of Tuvalu. *Environmental Economics and Policy Studies*, *20*(4), 705–739. https://doi.org/10.1007/s10018-018-0212-2

Tuvalu Coastal Adaptation Plan. (2022). *Tuvalu unveils Long-Term Adaptation Plan at COP27, a vision for a safe, climate-resilient future.* https://tcap.tv/news/2022/11/14/tuvalu-presents-long-term-adaptation-plan-ltap

Tuvalu Meteorological Service, Australian Bureau of Meteorology, Commonwealth Scientific and Industrial Research Organisation, & Australian Government. (2014). *Pacific-Australia climate change science and adaptation planning program: Current and future climate of Tuvalu.* https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/4_PACCSAP-Tuvalu-10pp_WEB.pdf

United Nations Office for Disaster Risk Reduction Sub-Regional Office for the Pacific. (2022). *Disaster risk reduction in Tuvalu: Status report 2022.* https://www.undrr.org/publication/disaster-risk-reduction-tuvalu-status-report-2022

World Bank Group. (2021). *Climate risk country profile: Tuvalu*. www.worldbank.org

Yates, O. E. T., Groot, S., Manuela, S., & Neef, A. (2022). "There's so much more to that sinking island!"—Restorying migration from Kiribati and Tuvalu to Aotearoa New Zealand. *Journal of Community Psychology*, *51*(3), 924–944. https://doi.org/10.1002/jcop.22928

Suggested citation: Ng Shiu, R., Newport, C., Underhill-Sem, Y., Burnett, R., Amosa-Baniani, C., & Nia, B. (2024). *Niutao: A community case study on climate (im)mobility from Tuvalu*. Waipapa Taumata Rau, University of Auckland. https://www.pacific-climate-research.auckland.ac.nz/

ISBN: 978-1-0670223-6-5